

# The case history of an aberrant Black-throated Mango Hummingbird *Anthracothorax nigricollis*

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Since 1985 the Black-throated Mango *Anthracothorax nigricollis*, one of the commonest Trinidad hummingbirds, has nested regularly in an open-sided greenhouse near Talparo, which has been used for the commercial production of tomatoes, and there have been as many as three nests in it at the same time. Thus, the nests and the birds are very familiar to me. On 22 May 1989 I discovered an empty nest in the greenhouse which on the following day had, to my surprise, a sitting bird that was to all appearances not the expected female but a male Black-throated Mango. (The sexes in this species are differently coloured and easily distinguished.) There was now one egg in the nest. A second egg was subsequently laid on some unrecorded date, probably 24 May. During the subsequent days this seemingly male bird was the only one seen incubating. No bird in female plumage ever approached the nest in my presence. On 9 June the first egg hatched, and at 16.00 hours on 11 June there was still one egg and one chick in the nest. At the same time the next day the nest was empty.

The main breeding season for hummingbirds in Trinidad is from December to June. Accordingly, in December 1989 I began a careful watch in the greenhouse in the expectation that the 'male' Black-throated Mango would be back again. I wanted to see if it would construct the nest or if it took over the incubation from the female after the eggs had been laid. On 14 February 1990 I found a nest with two chicks in a small greenhouse near by that was temporarily out of use. After I had been watching for some minutes a male-plumaged Black-throated Mango arrived at the nest and fed one of the chicks by regurgitation. It is highly unlikely that this bird was a different bird from the nesting 'male' bird of 1989 since true males are not known to feed the young in any hummingbird species.

Over the next nine days I watched this bird feed the chicks and I took several photographs. On 23 February both the chicks left the nest, and I watched the 'male' bird feed both of them, the younger only once, the older several times. During this time a bird in female plumage attempted to feed the older fledgling three times, seemingly without success. The young bird seemed reluctant to open its bill, and each time the 'male' quickly appeared and chased off the female. After this I did not see the young ones again.

Black-throated Mangoes use the same nest several times, but this nest had been damaged and would need repair before re-use. I kept watch to see if the 'male' would rebuild. On 16 March at 17.00 hours it was still unrepaired. At the same time the following day the nest was almost completely repaired. During 17 March the 'male' returned to

the nest several times and engaged in building activity with movements identical to those I had seen females use. On 20 March there was one egg in the nest, which had been empty on the preceding day.

As a rule hummingbirds lay the second egg two days after the first. I was determined to see the laying of the second egg on 22 March. The 'male' was on the nest the night before, as is usual in this species since incubation begins as soon as the first egg is laid. I got up early on 22 March and was in position watching the nest at 05.35 hours when it was still dark enough for seeing to be difficult. The 'male' was on the nest. At exactly 06.00 hours the bird flew away and I immediately checked the nest. There was one egg. At 06.10 hours the bird returned, went to the nest for a few seconds, then after perching near by for two minutes returned to the nest and settled down. At about 06.16 hours I noticed that the bird appeared to be standing on the nest. It then thrust its bill into the nest three or four times and a minute later settled down again. I did not wait for the bird to leave but checked the nest again at 06.25 hours. There were two eggs in the nest. No bird in female plumage had visited the nest; the 'male' was a functional female. By 7 April both chicks had hatched, and by 1 May they had flown. Two more eggs were laid in the same nest, one on 12 May and the other on 14 May. One hatched on 29 May. Presumably the second hatched a day or two later but I have no more notes after that date.

This bird came back again in 1991, when she completed four different nests and attempted two others. She abandoned the first completed nest only two days after laying the second egg, abandoned the second nest on the 18th day following the laying of the second egg (the eggs seemingly being infertile), and abandoned the third nest two days after the laying of the second egg. From the fourth nest she successfully reared two chicks.

In 1992 she again raised two chicks and I saw her feeding the juveniles twice, on 27 February and again on 29 February, 14 and 16 days after the first chick had left the nest. After this, just when I decided that she would better serve science dead than alive and I resolved to capture her, she disappeared and never re-appeared.

## Discussion

It is clear from the foregoing account that, despite the plumage, the bird was a functional female. Although hermaphrodites are known in some bird species (Terres 1982) the fact that female hummingbirds of both *Anthracothorax prevostii* and *Florisuga mellivora* in male plumage have been identified as female by dissection (F. G. Stiles pers. comm.) makes it probable that my bird was also female and not hermaphrodite. Be this as it may, the observations raise a number of fascinating questions. How did a male bird overcome its natural aggression towards another 'male' in order to mate with this female? If mating is unlikely, could this bird have stored sperm from one successful mating for more than one laying? Have the young of this bird been imprinted with male plumage as female plumage? Will the female young inherit their mother's male plumage?

Clearly, there are no certain answers to these questions. Presumably the 'male's' behaviour showed it to be female and overcame her mate's aggression. Terres (1982) cites a paper by Welty that reported on domestic hens laying fertile eggs "several months after mating". I think it unlikely that sperm could be stored for years and believe that mating would have taken place at least once in each breeding season. The observations record some strange behaviour in 1991, when two nests were abandoned shortly after the laying of the second egg and another abandoned on the 18th day of incubation because the eggs were seemingly infertile. (My records for the same species in the same greenhouse show an incubation period of 16 or 17 days depending on how it is measured and for which of the two eggs. For the aberrant female the incubation period was again 16 or 17 days, except on one occasion when, measuring from the date of finding the nest with one egg, the period was 15 days. If the first egg had been laid one day earlier the period would have been 16 days.) Is there a suggestion here that the aberrant female had laid these eggs in 1991 without mating?

To the third question the answer may be a tentative "yes". It may not be rare for female hummingbirds to feed young that are not their own. Skutch (1974) records that Helmut Wagner "saw strange females feed fledgling white-eared hummingbirds . . . Once he saw a green violet-ear feed young white-ears. In Ruschi's aviary a female planalto hermit adopted sixteen-day-old nestlings whose mother had died, attending them as though they were her own." Yet, as noted above, the older of two fledglings of the aberrant female refused to be fed by a normal female. I suggest that the reason is that the chick had been imprinted with male plumage.

To the fourth question my observations provide no answer, but an answer is not beyond obtaining in a similar case if the young could be placed in an aviary with their mother for a sufficiently long period. If the female young inherited male plumage they would face the same difficulties in mating as their mother presumably did. If, however, the female young were normally coloured but imprinted with male plumage a different problem would arise, for they might reject normal males and seek females as mates. Once again, I suppose, behaviour would override appearance and eventually bring the two sexes together for mating.

#### Acknowledgement

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#### References:

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Skutch, A. F. 1974. *The Life of the Hummingbird*. Octopus Books, London.

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